



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,590	06/30/2004	Sven-Ake Afsenius	073126	4764

26288 7590 09/20/2007
ALBIHNS STOCKHOLM AB
BOX 5581, LINNEGATAN 2
SE-114 85 STOCKHOLM; SWEDEN
STOCKHOLM,
SWEDEN

EXAMINER

VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
----------	--------------

2622

MAIL DATE	DELIVERY MODE
-----------	---------------

09/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/500,590

Applicant(s)

AFSENIUS, SVEN-AKE

Examiner

John M. Villecco

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 14-17, 19-22 and 24-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 14-17, 25 and 29-32 is/are rejected.
- 7) ☒ Claim(s) 4, 19-22, 24 and 26-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/30/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claim 9-13, 18, and 23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 31, 2007. Additionally, applicant has cancelled claims 9-13, 18, and 23
2. Applicant's election without traverse of claims 1-8, 14-17, 19-22, and 24-32 in the reply filed on August 31, 2007 is acknowledged.

Specification

3. The disclosure is objected to because of the following informalities:
 - On page 8, line 17 of the specification, applicant uses the word "noice". This appears to be a typographical error and that the applicant meant to use the word – noise –.
 - On page 13, line 14 of the specification, applicant uses the word "Wiewfinder". This appears to be a typographical error and that the applicant meant to use the phrase – Viewfinder –.

Appropriate correction is required.

Claim Objections

4. Claim 4 is objected to because of the following informalities:

- In line 1 of claim 4, applicant recites the phrase "A camera of claims". This is appears to be a typographical error, as the previous claim listing recites the phrase "A camera of claims 1 or 2".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 6, 8, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 6 recites the limitation "an optical viewfinder with a focusing screen" in lines 1. There is insufficient antecedent basis for this limitation in the claim. More specifically, it is not clear if the claimed optical viewfinder is the same optical viewfinder being claimed in claim 5.

8. Claim 8 recites the limitation "a viewfinder to superpose images" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. More specifically, it is not clear if the claimed viewfinder is the same optical viewfinder claimed in the parent claim (claim 5). For examination purposes it will be assumed that the claimed viewfinder is different from the claimed optical viewfinder of claim 5.

9. Claim 32 recites the limitation "said template or image comparison technique" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Chuang et al. (U.S. Publ. No. 2001/0002216).

3. Regarding **claim 5**, Chuang discloses an imaging system for generating a combined output image having image components taken at different focusing distances. More specifically and in relation to the applicant's claim language, Chuang discloses a digital camera (interpreted by the examiner to be the image generating means (10), the image processing means (16), and the image storage device (18)) for capturing a scene composed of objects within a field of view at different object distances (See Figure 2) in front of the lens, a focusing device (imaging lens, 11), an electronic image detector (charge-coupled-device, 102), and an image-sharpness detector (image processor, 16). The imaging system operates such that at least two differently focused images are captured of the same scene. See paragraph 0028. Furthermore, Chuang discloses that the focusing device (imaging lens, 11) is arranged to capture sequential images at the different object distances. See paragraph 0029. Furthermore, the image sharpness detector (image processor, 16) determines the portions of each image that are the most optimally focused by determining the best contrast. See paragraph 0032. The optimally focused portions of the image are then output to form the entire image. Finally, the optimally focused image is output to a terminal memory (image storage device, 18).

Chuang, however, fails to specifically disclose that the camera includes an optical viewfinder. However, Official Notice is taken as to the fact that it is well known in the art to include optical viewfinders with a diffusive focusing screen in an electronic camera. One of ordinary skill in the art would recognize that optical viewfinders enable a user to properly align an image for image capture. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an optical viewfinder without a diffusive focusing screen, so that the user may properly align the camera with the scene to be photographed. The last limitation of the optical viewfinder limitation is interpreted to be a functional limitation and thus is not being considered. As per MPEP 2114, claims directed toward an apparatus must be distinguished from the prior art in terms of structure rather than function.

4. As for *claim 7*, furthermore, Official Notice is taken as to the fact that it is well known in the art to reduce the aperture of an optical viewfinder. This allows for an appropriate image to be presented to the user. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an optical viewfinder in Chuang capable of reducing its aperture.

5. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. (U.S. Publ. No. 2001/0002216) in view of Sasagaki et al. (U.S. Patent No. 4,693,577)**

6. Regarding *claim 6*, as mentioned above in the discussion of claim 5, Chuang and the examiner's Official Notice statement disclose all of the limitations of the parent claim. However, Chuang fails to explicitly disclose that the optical viewfinder includes a focusing

Art Unit: 2622

screen that can be moved out of the ray path. Sasagaki, on the other hand, discloses that it is well known in the art to include a focusing screen in an optical viewfinder that can be removed from the ray path. More specifically, Takahashi discloses that the focusing screen (12) can easily be removed from the optical path. See column 1, lines 59-62 and column 2, lines 28-37. This feature allows for a simple construction that permits removal and interchange of a focusing screen. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the focusing screen of an optical viewfinder to be transported out of the ray path so that it can easily be replaced.

7. **Claims 1-4, 8, 14-17, 25, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuang et al. (U.S. Publ. No. 2001/0002216) in view of Silber (U.S. Publ. No. 2002/0181762).**

8. Regarding *claim 1*, Chuang discloses an imaging system for generating a combined output image having image components taken at different focusing distances. More specifically and in relation to the applicant's claim language, Chuang discloses a digital camera (interpreted by the examiner to be the image generating means (10), the image processing means (16), and the image storage device (18)) for capturing a scene composed of objects within a field of view at different object distances (See Figure 2) in front of the lens, a focusing device (imaging lens, 11), an electronic image detector (charge-coupled-device, 102), and an image-sharpness detector (image processor, 16). The imaging system operates such that at least two differently focused images are captured of the same scene. See paragraph 0028. Furthermore, Chuang discloses that the focusing device (imaging lens, 11) is arranged to capture sequential images at the different

object distances. See paragraph 0029. Furthermore, the image sharpness detector (image processor, 16) determines the portions of each image that are the most optimally focused by determining the best contrast. See paragraph 0032. The optimally focused portions of the image are then output to form the entire image. Finally, the optimally focused image is output to a terminal memory (image storage device, 18).

Chuang does not disclose how the different focusing positions are determined. Chuang therefore, fails to explicitly disclose that the camera includes a focus selector for preselection of states of focus or focusing the camera at preselected object distances. Silber, on the other hand, discloses that it is well known in the art to set up focus positions before the capture of the first image. More specifically, Silber discloses an imaging system for capturing images with an extended depth of field. This is done similarly to Chuang by combining in focus portions of captured images. Silber discloses that it is well known in the art to define the parameters of the image capture prior to capture operation. Paragraph 0059 discloses that before capturing an image of the object, the operating parameters are defined. After they are defined, all of the source images are captured. Therefore, the examiner is interpreting this operation to be preselecting states of focus and object distances. This feature allows for the operation of the camera to be carried out automatically, without having to change the focus distances during the image capture operation. Since the details of setting the focus operation in Chuang are not disclosed, one of ordinary skill in the art would have found it obvious to look to Silber for setting up appropriate preselected focus positions prior to the image capture procedure.

Furthermore, Chuang fails to specifically disclose that the camera includes a viewfinder. Silber on the other hand, discloses that it is well known in the art to include a viewfinder in a

camera system for viewing images. More specifically, Silber discloses the use of a display device (134), which is interpreted by the examiner to be a viewfinder, for viewing the source images or the composite images. See paragraph 0042. One of ordinary skill in the art would recognize that a display provides for a visual feedback of the captured image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a viewfinder in the camera of Chuang so that the user is given visual feedback of the generated composite image.

9. Regarding **claim 2**, Chuang discloses an imaging system for generating a combined output image having image components taken at different focusing distances. More specifically and in relation to the applicant's claim language, Chuang discloses a digital camera (interpreted by the examiner to be the image generating means (10), the image processing means (16), and the image storage device (18)) for capturing a scene composed of objects within a field of view at different object distances (See Figure 2) in front of the lens, a focusing device (imaging lens, 11), an electronic image detector (charge-coupled-device, 102), and an image-sharpness detector (image processor, 16). The imaging system operates such that at least two differently focused images are captured of the same scene. See paragraph 0028. Furthermore, Chuang discloses that the focusing device (imaging lens, 11) is arranged to capture sequential images at the different object distances. See paragraph 0029. Furthermore, the image sharpness detector (image processor, 16) determines the portions of each image that are the most optimally focused by determining the best contrast. See paragraph 0032. The optimally focused portions of the image are then output to forms the entire image. Finally, the optimally focused image is output to a terminal memory (image storage device, 18).

Furthermore, Chuang fails to specifically disclose that the camera includes an electronic viewfinder. Silber on the other hand, discloses that it is well known in the art to include an electronic viewfinder in a camera system for viewing images. More specifically, Silber discloses the use of a display device (134), which is interpreted by the examiner to be an electronic viewfinder, for viewing the source images or the composite images. See paragraph 0042. One of ordinary skill in the art would recognize that a display provides for a visual feedback of the captured image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an electronic viewfinder in the camera of Chuang so that the user is given visual feedback of the generated composite image.

10. With regard to **claim 3**, Silber discloses that the composite image can be forwarded to the display (134) for viewing. See paragraph 0042

11. As for **claim 4**, Silber discloses that only one of the source images may be displayed on the display (134). See paragraph 0042. Thus, the image displayed may be an image with the shorter objective focal length.

12. Regarding **claim 8**, as mentioned above in the discussion of claim 5, Chuang discloses all of the limitations of the parent claim. However, Chuang fails to explicitly disclose a viewfinder to superpose the images to form an image with a better depth of field. Silber on the other hand, discloses that it is well known in the art to include an electronic viewfinder in a camera system for viewing images. More specifically, Silber discloses the use of a display device (134), which is interpreted by the examiner to be an electronic viewfinder, for viewing the source images or the composite images. See paragraph 0042. One of ordinary skill in the art would recognize that a display provides for a visual feedback of the captured image. Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to include an electronic viewfinder in the camera of Chuang so that the user is given visual feedback of the generated composite image.

13. Regarding **claim 14**, Silber discloses that only one of the source images may be displayed on the display (134). See paragraph 0042. Thus, the user has the ability to view only one of the captured source images. Clearly, the user is given the opportunity to select the display of one of the source images or the composite image. Thus, it follows that there must be some type of selector for selecting which source image to view. Although an image selector is not specifically discussed, one of ordinary skill in the art would conclude that it would have been obvious to include some type of selector since the user has the ability to view the source images.

14. As for **claim 15**, Chuang discloses an imaging system for generating a combined output image having image components taken at different focusing distances. More specifically and in relation to the applicant's claim language, Chuang discloses a digital camera (interpreted by the examiner to be the image generating means (10), the image processing means (16), and the image storage device (18)) for capturing a scene composed of objects within a field of view at different object distances (See Figure 2) in front of the lens, a focusing device (imaging lens, 11), an electronic image detector (charge-coupled-device, 102), and an image-sharpness detector (image processor, 16). The imaging system operates such that at least two differently focused images are captured of the same scene. See paragraph 0028. Furthermore, Chuang discloses that the focusing device (imaging lens, 11) is arranged to capture sequential images at the different object distances. See paragraph 0029. Furthermore, the image sharpness detector (image processor, 16) determines the portions of each image that are the most optimally focused by

determining the best contrast. See paragraph 0032. The optimally focused portions of the image are then output to forms the entire image. Finally, the optimally focused image is output to a terminal memory (image storage device, 18).

Chuang does not disclose how the different focusing positions are determined. Chuang therefore, fails to explicitly disclose that the camera includes a focus selector for preselection of states of focus or focusing the camera at preselected object distances. Silber, on the other hand, discloses that it is well known in the art to set up focus positions before the capture of the first image. More specifically, Silber discloses an imaging system for capturing images with an extended depth of field. This is done similarly to Chuang by combining in focus portions of captured images. Silber discloses that it is well known in the art to define the parameters of the image capture prior to capture operation. Paragraph 0059 discloses that before capturing an image of the object, the operating parameters are defined. After they are defined, all of the source images are captured. Therefore, the examiner is interpreting this operation to be preselecting states of focus and object distances. This feature allows for the operation of the camera to be carried out automatically, without having to change the focus distances during the image capture operation. Since the details of setting the focus operation in Chuang are not disclosed, one of ordinary skill in the art would have found it obvious to look to Silber for setting up appropriate preselected focus positions prior to the image capture procedure.

15. As for **claim 16**, both Chuang and Silber disclose that all of the source images are captured and stored before any processing is performed. This is interpreted by the examiner to be a continuous mode. Furthermore, during the image capturing process the focusing lens is driven to the appropriate position. In Silber the imaging assembly is moved along the x-axis (see

paragraph 0048). In Chuang, the timing controller (12) moves the lens (11). Silber discloses that the movement of the lens to the desired position is done automatically. See paragraph 0051.

16. With regard to **claim 17**, both Chuang and Silber disclose moving the focusing lens to a next desired focusing position. Additionally, both Chuang and Silber disclose a mechanism for driving the lens to the desired position. In Silber the imaging assembly is moved along the x-axis (see paragraph 0048). In Chuang, the timing controller (12) moves the lens (11). In each of Silber and Chuang, this is controller by a processor. Neither Chuang nor Silber, however, disclose the use of a motion-sensor, calibrated counter for detecting the moving position of the lens. Official Notice is taken as to the fact that it is well known in the art to use a counter to determine the moved position of a focusing lens. This allows the camera system to know the exact position of the focusing lens. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a motion sensor, calibrated counter to determine the exact position of the focus lens in both Chuang and Silber.

17. Regarding **claim 25**, Silber discloses that the focus position can be programmed into the system. During the image capture process the program is recalled. Furthermore, Silber discloses that the intervals can be substantially even. See paragraphs 0043, 0047, 0048, and 0051.

18. With regard to **claim 29**, Chuang discloses an embodiment in Figures 6-8 in which a plurality of sensors (102') are used to capture a plurality of simultaneous images. The image sensors (102') are electrically connected via the data buffer unit (14') and output a common read-out via the image processing means (17).

19. As for **claim 30**, Chuang discloses the use of a permanently attached lens (11). However, the combination of Chuang and Silber fails to explicitly disclose a detachable add-on lens for

fixed or variable magnification. Official Notice is taken as to the fact that it is well known in the art to include an add-on lens for magnification purposes. It is well known that these types of lens can extend the magnification properties of a camera, thereby providing the user with more photographing options. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an add-on lens for magnifying so that the user is provided with more options when composing pictures.

20. With regard to **claim 31**, Chuang discloses an embodiment in Figures 6-8 in which three sensors are used to capture a plurality of images. Thus, there are two mutually parallel detector planes that are separated to register differently focused images. See paragraphs 0037-0048.

21. Regarding **claim 32**, Chuang discloses that the image processing means compares a contrast value of the images to one another. This is interpreted to be an image comparison technique. Furthermore, each of the images recorded to the data buffer unit (14) are separate images in which the focusing distance between the images recorded in the data buffer unit (14) are different from each other. See paragraphs 0028 and 0032.

Allowable Subject Matter

22. Claims 19-22, 24, and 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

23. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 19, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest a focus-registrar contrivance and at least one

focus-memory, wherein means are arranged for registration of single states of focus as well as sets of such priority-states and furthermore forward such information to said memory for saving.

As for claim 24, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest an interval selector contrivance, wherein means are arranged for selecting at least one operation object distance interval corresponding to the focusing interval within which image detection is arranged to take place.

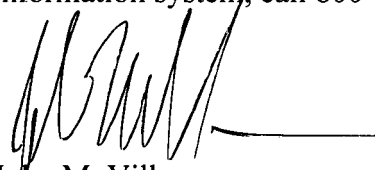
With regard to claim 26, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest a proximity selector contrivance, wherein means are allotted for setting the nearest focus distance allowed during image detection, and this being controllable with the proximity selector and said procedure constituting an optional preselection.

Regarding claim 27, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest an optimal focus selector and depth of field selector contrivances, wherein means are arranged for selecting and focusing within the field of view with said focus selector, on at least one object or distance of preference, for optimal image resolution and to furthermore set the depth of field selector for an object distance interval of priority, within which depth of field improvement is being arranged and this interval being located in front of and/or behind said object distance of preference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (571) 272-7319. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John M. Villecco
Primary Examiner, Art Unit 2622
September 12, 2007